



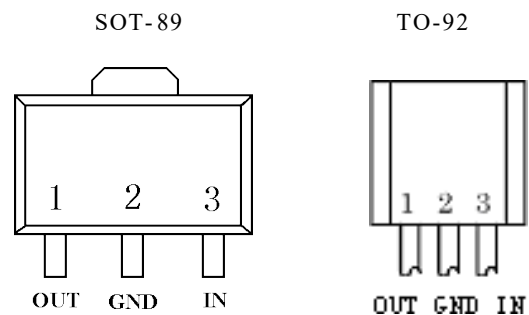
Three-terminal Voltage Regulator

78L05

FEATURES

- Maximum Output current: 0.1A
- Output Voltage: 5V
- Continuous total dissipation: 0.5W

PIN CONNECTION



ABSOLUTE MAXIMUM RATINGS (Ta=25 °C)

Characteristics		Symbol	Value	Unit
Input Voltage		Vi	25	V
Operating Junction Temperature Range		Tj	-40 ~ +125	°C
Power Dissipation	TO- 92	Pd	625	mW
	SOT- 89		350	
Operating Temperature Range		Topr	-30 ~ +85	°C
Storage Temperature Range		Tstg	-85 ~ +150	°C

ELECTRICAL CHARACTERISTICS

(unless otherwise noted, Vi=10V, Io=40mA, -30<Tj<85 °C, C1=0.33μF, Co=0.1μF) (Note 1)

Characteristics	Test conditions		Symbol	Min.	Typ.	Max.	Unit
Output Voltage	Tj=25 °C	A	Vo	4.90	5.0	5.10	V
		B 1		4.80		4.90	
		B 2		5.10		5.20	
	7V≤Vi≤20V; Io=1mA~40mA			4.80		5.20	V
	7V≤Vi≤Vmax; Io=1mA~70mA			4.80		5.20	V (note2)
Load Regulation	Tj=25 °C; Io=1mA~100mA		ΔVo		11	60	mV
	Tj=25 °C; Io=1mA~40mA				5.0	30	mV

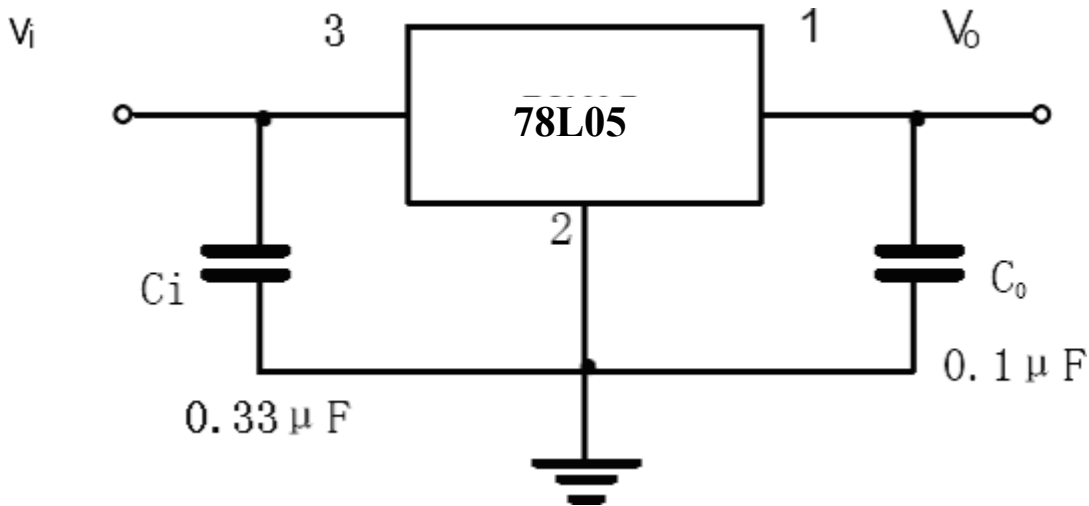


Line Regulation	$T_j=25\text{ }^\circ\text{C}; 7\text{V}\leq V_i\leq 20\text{ V}$	ΔV_o		8	150	mV
	$T_j=25\text{ }^\circ\text{C}; 8\text{V}\leq V_i\leq 20\text{V}$			6	100	mV
Quiescent Current		I_q		2.0	5.5	mA
Quiescent Current Change	$8\text{V}\leq V_i\leq 20\text{ V}$	ΔI_q			1.5	mA
	$1\text{mA}\leq I_o\leq 40\text{mA}$				0.1	mA
Output Noise Voltage	$10\text{Hz}\leq f\leq 100\text{ k Hz}$	V_N		40		μV
Temperature Coefficient of V_o	$I_o=5\text{mA}$	$\Delta V_o/\Delta T$		-0.65		$\text{mV}/^\circ\text{C}$
Ripple Rejection	$10\text{V}\leq V_i\leq 20\text{V}; f=120\text{Hz}; T_j=25\text{ }^\circ\text{C}$	RR	41	48		dB
Dropout Voltage	$T_j=25\text{ }^\circ\text{C}$	V_d		1.7		V

Note 1: The Maximum steady state usable output current and input voltage are very dependent on the heating sinking and/or lead temperature length of the package. The data above represent pulse test

conditions with junction temperatures as indicated at the initiation of test. Note 2: Power dissipation < 0.625W

APPLICATION CIRCUIT

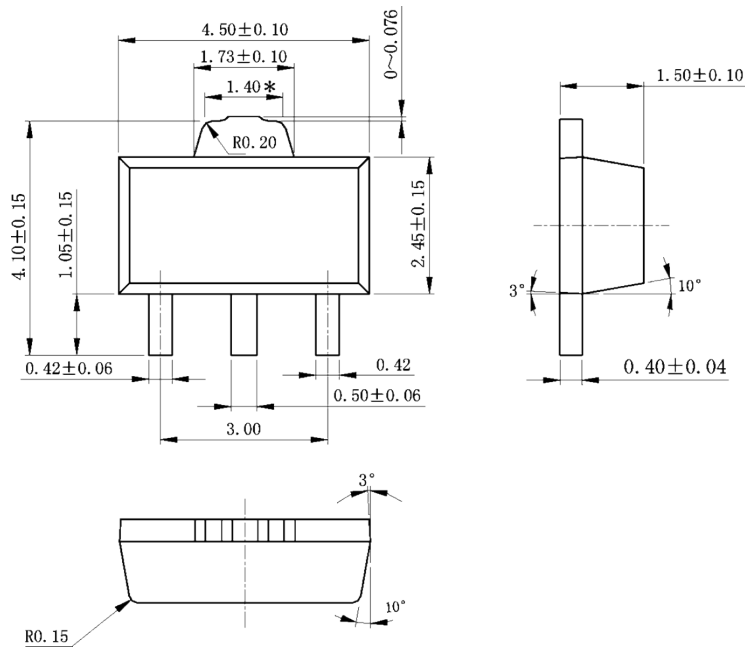


*Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.



OUTLINE DRAWING

SOT- 89-3L



TO-92

